

REMARKS

Claims 1-15 are pending.

In the present Amendment, independent Claims 1 and 2 are amended for clarification purposes to recite that the conductive composition comprises a silver containing component that comprises a particulate silver compound. For example, in Example 2 at page 13 of the originally filed specification, the silver containing component comprised silver oxide (a particulate silver compound). Claims 1 and 2 were also amended to further clarify that the recited ratio is a ratio between the silver containing component and the binder. For example, in the working embodiments disclosed by Example 2, the quantity of binder employed relative to the total silver containing component was within the range of from 0.78 to 2.36 parts by weight.

No new matter has been added, and entry of the Amendment is respectfully requested.

Referring to page 2 of the Office Action, claims 1-6 and 9-15 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0124259 ("Kodas").

Referring to page 4 of the Office Action, claims 7-8 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kodas.

Applicants respectfully traverse and request the Examiner to reconsider in view of the Amendment to the claims and the following remarks.

As mentioned above, the present claims have been amended to clarify that the recited ratio compares the relative amount of silver containing component and binder. Accordingly, in calculating the quantity of the binder used relative to 100 parts by weight of the silver containing component in Examples 20, 21, 22 and 27 of Kodas, the metallic silver powder in Kodas should be taken into account.

In light of the above, the amount of binder relative to the amount of silver containing component in the examples of Kodas is calculated as follows:

In Example 20 of Kodas at paragraph [0273], the references employs a mixture of 80g of metallic silver powder and 10g of silver trifluoroacetate : 0.1g of ethyl cellulose = 90 : 0.1. This defines the ratio as 100 : 0.11.

In Example 21 of Kodas at paragraph [0274], the reference employs a mixture of 80g of metallic silver powder, 9g of silver trifluoroacetate and 1g of palladium acetate : 0.2g of ethyl cellulose = 90 : 0.2. This defines the ratio as 100 : 0.22.

In Example 22 of Kodas at paragraph [0275], the reference employs a mixture of 80g of metallic silver powder, 9g of silver trifluoroacetate and 1g of palladium acetate : 0.2g of ethyl cellulose = 90 : 0.2. This defines the ratio as 100 : 0.22.

In Example 27 of Kodas at paragraph [0280], the reference employs a mixture of 54.5g of silver/silica composite powder and 6g of silver trifluoroacetate : 0.05g of ethyl cellulose = 60.5 : 0.05. This defines the ratio as 100 : 0.083.

Accordingly, the amount of a binder in the examples of Kodas cited by the Examiner actually ranged from 0.083-0.22 parts of cellulose per 100 parts by weight of the silver containing component.

In contrast, the present claims require the amount of binder used relative to 100 parts by weight of silver containing component to be within a range of from 0.78 to 2.36 parts by weight.

Therefore, the ratio of ethyl cellulose to the silver containing component disclosed in Kodas is significantly different from, and would not have suggested to one of ordinary skill in the art, the recited ratio of binder to silver containing component. Accordingly, the present application needs a smaller quantity of silver containing component itself than that required by

Kodas (in order to provide the desired conductivity). Thus, the present application has a unique effect that can not be easily achieved by Kodas.

Furthermore, Kodas discloses a conductive composition comprising a “metallic silver powder,” wherein the metallic silver powder, as the conductive material, is employed as the main component of the composition.

Moreover, since the presently claimed conductive composition includes a binder, the following unique effect can be obtained.

[B]ecause the binder either fills the gaps in the woven structure of the silver particles, or covers the surface of the coating, or fills in the gaps in the silver coating and the target surface, the addition of the binder does not cause the volume resistivity of the obtained conductive paint to increase. Furthermore, the presence of the binder protects the surface of the conductive paint, improves the mechanical strength, has a favorable effect on the flexibility of the coating itself, and produces a coating with good adhesion to the substrate. Consequently, the value of the volume resistivity of a conductive paint of the present invention falls within a range from 3×10^{-6} to $8 \times 10^{-6} \Omega\text{-cm}$, which is approximately the same volume resistivity as metallic silver.

(See the present specification at page 9, lines 16-25).

In addition, the present application discloses that because

the volume resistivity of the obtained conductive paint is extremely low, adequate conductivity can be obtained even when the coating is extremely thin, and even coatings with thickness values of approximately $0.1 \mu\text{m}$ are feasible,

and therefore,

when forming electrical circuits on a flexible circuit board or the like, [a conductive composition] can be formed with a sufficiently narrow line width, without needing to be formed overly thickly.

(See the present specification at page 3, lines 12-14 and page 10, lines 12-15).


In other words, since Kodas teaches a composition whose main component is metallic silver powder, Kodas does not teach or suggest the unique effects of the present application.

Even if a *prima facie* case of obviousness could be established, it would be rebutted by the superior results shown in Tables 2A and 2B at page 14 of the originally filed specification (in addition to the superior effects discussed above) that were obtained when a binder was employed within the recited range. These results would have been unexpected in view of the disclosure of Kodas, since the reference provides no express guidance regarding the binder ratio limitation to a person of ordinary skill in the art, outside of the specific examples disclosed therein.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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